

FRAME ASSEMBLY FOR ATTACHMENT TO A COMMERCIALLY AVAILABLE PICTURE FRAME

BACKGROUND OF THE INVENTION

5 Field of the Invention

The present invention generally relates to a frame assembly for attachment to a commercially available picture frame that allows for easy replacement of an item of display and methods for assembling a picture frame utilizing a frame assembly.

Background Information

- 10 Most commercially available picture frames do not allow for the easy removal and insertion of display materials. These frames typically have a back cover that protects the display material from dust and dirt. The back cover is typically affixed to the picture frame by nailing, stapling or gluing, thus making it difficult and time consuming to change the material displayed in the frame.
- 15 Certain picture frames allow quick and easy access to change the display material, however these picture frames suffer from various shortcomings. Picture frame or display devices that allow for the easy interchange of the material being displayed typically utilize a hinge mechanism, which is usually connected directly to a frame member or is manufactured as an integral part of the frame. Some require that the hinge mechanism be built into the frame during
- 20 manufacture while others physically require that the hinge mechanism be attached to a picture frame in a complex or difficult and time consuming process. Picture frames that have a hinge mechanism built into picture frame members, while providing easy access to insert or remove display materials, limit a consumer's ability to choose a picture frame of their choice. A consumer is limited to only those types and styles of frames manufactured with the hinge
- 25 mechanism formed as an integral part of the frame. This significantly restricts a consumers choice of frame style, color, etc. Furthermore, such devices do not allow a consumer to quickly and easily adopt a commercially available picture frame to one allowing quick and easy access to insert or remove display materials. Picture frames that have a hinged back cover are typically

fabricated such that the back cover is an integral part of the frame. This restricts a consumer in selecting the commercially available picture frame of their choice. Furthermore, to the extent a hinged back cover is attached to a picture frame it requires the measuring and assembly of the components which is a difficult and time consuming process for most consumers or frame

5 assemblers. The prior art devices limits consumer selection of commercially available or custom picture frame of their choice with the feature of quick and easy access to insert and remove display materials. The prior art devices do not allow a consumer to quickly and easily modify a commercially available picture frame to provide for simple and easy insertion and removal of display materials.

10 U.S. Patent 1,342,477 ('477 patent) to Walas describes a picture frame that has two frame members superposed on the back of the picture frame. It also discloses a back cover that is hingeably connected to the superposed picture frame member. The back cover is resiliently connected by curved spring members to a plate that engages the glass plate and holds the plate in the frame. The picture frame in the '477 patent has superposed frame members, which are

15 individual components that have to be aligned and installed onto the frame which is a time consuming and difficult process. In contrast, the present invention provides a frame assembly that can be easily and quickly affixed to a commercially available picture frame. The present invention provides a means for commercial frame assemblers and consumers to easily and quickly customize and use commercially available frames.

20 U.S. Patent No. 2,649,799 ('799 patent) to Spertus describes a picture-frame album that is comprised of a front section and a rear section that are pivotally connected along one side by hinges. The frame also includes a storage housing section that allows a number of pictures to be stored within the frame. The frame can be opened and the display material changed as needed. The picture-frame album described in the '799 patent is an integral display frame assembly. In

25 contrast to the present invention. the frame described the '799 patent cannot be used to convert a commercially available picture frame to a frame whereby the display material can be easily changed.

U.S. Patent 3,665,627 ('627 patent) to MacCluney describes a picture frame that has a backing member that is hingeably connected to the rear frame of the picture frame. The closure edge of the backing member is adopted to fit into a concave, arcuate abutment in the inner edge of the rear frame. The frame in the '627 patent requires that the picture frame be specially
5 manufactured so that it has a concave inner edge. This restricts a consumer's ability to select a frame of their choice. Furthermore, the picture frame described in the '607 does not allow a commercially available picture frame to be easily adapted so that display materials can be easily removed and inserted into the picture frame.

U.S. Patent No. 4,756,108 ('108 patent) to Lackey discloses an integral display frame that
10 allows for the display material to simply be installed and removed from display. The frame is hingeably attached at the bottom to vertical support members which are attached to the wall or other mounting surface. A removable compressible insert fits within the frame and when the frame is closed compresses the display material against the window. The device is an integral unit with a complex hinge, components of which are built into the frame during manufacture. In
15 contrast to the present invention, the device described in the '108 patent is not suitable for use with commercially available picture frames.

As used herein the term "commercially available picture frame" means picture frames that consumers can purchase in an already assembled condition as well as custom made picture frames that are assembled after the consumer selects the style and color of picture frame
20 molding.

SUMMARY OF THE INVENTION

The present invention provides a frame assembly for attachment to a commercially available picture frame that allows for the easy removal and insertion of display materials in the picture frame. The frame assembly is comprised of top and bottom members and opposing side
25 members which are connected at their respective ends. A back cover is hingeably connected to one of the frame members. The frame assembly fits into a recess in the back surface of a picture frame and is affixed to the back surface of the picture frame. The hinged connection on the

frame assembly allows the rear cover to be easily opened and closed so that display materials can be easily inserted or removed.

BRIEF DESCRIPTION OF THE DRAWINGS

For a further understanding of the nature of the present invention reference should be made to the following detailed description, taken in conjunction with the accompanying drawings in which like parts are given life reference numerals, and wherein:

FIG. 1 is a plan view of the frame assembly.

FIG. 2 is a cross-sectional view of a frame assembly member.

FIG. 3 is a cross-section view of the frame assembly in a closed position.

FIG. 4 is a perspective view of the frame assembly with the back cover in a partially opened position.

FIG. 5 is a partial cross-sectional view of the frame assembly and the hinged fastener.

FIG. 6 illustrates how the frame assembly mates with a commercially available picture frame.

FIG. 7 is a cross-section view of a picture frame.

FIG. 8 is a cross-sectional view of the frame assembly after it has been mated with a commercially available picture frame.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

In a first aspect the present invention provides for a frame assembly for attachment to a commercially available picture frame that allows for the easy replacement of an item for display

within said picture frame, said frame assembly comprising:

- (a) an upper frame assembly member, a lower frame assembly member, and opposing side frame assembly members, each of said frame assembly members having a horizontal flange and a vertical flange, said horizontal and vertical flanges connected at a right angle, each of said horizontal flanges having an upper face and a lower face, each of said vertical flanges having an inner face and an outer face;

- (b) a back cover hingeably connected to one frame assembly member, said back cover having a front side and a rear side, said hingeable connection allowing said back cover to be opened and closed.

In a second aspect the present invention provides for a frame assembly for attachment to
5 a commercially available picture frame that allows for the easy replacement of an item for display within said picture frame, said frame assembly comprising:

- (a) an upper frame assembly member, a lower frame assembly member, and opposing side frame assembly members, at least two of said frame assembly members having a horizontal flange and each of said frame assembly members having a
10 vertical flange, said horizontal and vertical flanges connected at a right angle, each of said horizontal flanges having an upper face and a lower face, each of said vertical flanges having an inner face and an outer face;
- (b) a back cover hingeably connected to one frame assembly member, said back cover having a front side and a rear side, said hingeable connection allowing said
15 back cover to be opened and closed.

In a third aspect the present invention provides for a frame assembly for attachment to a commercially available picture frame that allows for the easy replacement of an item for display within said picture frame, said frame assembly comprising:

- (a) an upper frame assembly member, a lower frame assembly member, and opposing
20 side frame assembly members, each of said frame assembly members having a horizontal flange and at least two of said frame assembly members having a vertical flange, said horizontal and vertical flanges connected at a right angle, each of said horizontal flanges having an upper face and a lower face, each of said vertical flanges having an inner face and an outer face;
- (b) a back cover hingeably connected to one frame assembly member, said back
25 cover having a front side and a rear side, said hingeable connection allowing said back cover to be opened and closed.

In a fourth aspect the present invention provides for adapting an assembled commercially available picture frame to allow display materials to be easily and quickly inserted and removed from said picture frame said method comprising the steps of:

- 5 (a) providing an assembled commercially available picture frame, said picture frame comprising an upper picture frame member, a lower picture frame member and opposing side picture frame members, said picture frame having a rear frame face, said rear frame face having an inner edge, said rear frame face having a recess along said inner edge, said recess having a depth and a width, said recess further having a vertical face and a horizontal face;
- 10 (b) providing a transparent panel sized to fit within the recess in said rear frame face, said panel being supported by said horizontal face of said recess;
- 15 (c) providing a frame assembly, said frame assembly comprising an upper frame assembly member, a lower frame assembly member, opposing side frame assembly members, each of said frame assembly members having a horizontal flange and a vertical flange, said horizontal and vertical flanges being connected at a right angle, said horizontal flange have an upper face and a lower face, said vertical flange having an inner face and an outer face, said vertical flange having a depth dimension that is less than the depth of said recess in said picture frame, said frame assembly further having a back cover hingeably connected to one
20 frame member, said back cover having a front side and a rear side, said hingeable connection allowing said back cover to be opened and closed;
- 25 (d) mating said frame assembly with said picture frame such that each lower face of each horizontal flange rests on said rear frame face of said picture frame, and the outer face of each of said vertical flanges is positioned adjacent to said vertical face of said recess;
- (e) affixing said frame assembly to said picture frame by fastening means.

Specific apparatuses and methods within the scope of the present invention include, but are not limited to, the apparatuses and methods discussed in detail herein and/or illustrated in the

drawings that are present herein. Contemplated equivalents of the apparatuses and methods described and illustrated herein and/or illustrated in the drawings contained herein include apparatuses and methods which otherwise correspond thereto, and which have the same general properties and/or components thereof, wherein one or more simple or other variations of

5 components, or materials are made.

All of the structures and components of the present invention, such as frame members, back cover, hinges, latches and compressible materials are commercially available from sources known by those of ordinary skill in the art.

For the purpose of illustrating structures that may be employed in the apparatuses and
10 methods of the present invention, there are shown in the drawings, which form a material part of this disclosure, different views of various components that may be employed in the apparatuses and methods of the present invention. The different components that may be employed in the apparatuses and methods of the present invention may be generally arranged in the manner shown in the drawings, or described hereinbelow. However, the present invention is not limited
15 to apparatuses and methods having the precise arrangements, configurations, dimensions and/or instrumentalities shown in these drawings, or described hereinbelow. These arrangements, configurations, dimensions and instrumentalities may be otherwise, as circumstances require.

Different specific embodiments of the components that may be employed in the apparatuses and methods of the present invention will now be described with reference to the
20 drawings.

As shown in FIG 1 the frame assembly 10 has an upper frame assembly member 11, a lower frame assembly member 12, and opposing side frame assembly members 13. The frame assembly members 11, 12 and 13 are connected at their respective ends forming a rectangular frame assembly. Although in the preferred embodiment the frame assembly members 11, 12 and
25 13 are connected at their respective ends it is recognized that the frame assembly can be manufactured as a single unit, for example by forming the frame assembly using a molding or casting process as is known by those of ordinary skill in the art. The frame assembly members 11, 12 and 13 can be fabricated from metal, wood, plastic, resin, carbon filament or other

composite material. In the preferred embodiment a back cover 15 is hingeably connected by one or more piano hinges 22 to one of said frame assembly members 11, 12 or 13. In the preferred embodiment, the frame assembly 10 is provided with means to affix or hang the frame assembly on a wall. The preferred means to hang or affix the frame assembly 10 to a wall is a serrated clip
5 31 that is affixed to an upper face 42 of a horizontal flange 40 of a frame assembly members 11, 12 or 13, however, it is recognized that other means as known to those skilled in the art can be used.

As shown in FIG 2 each frame assembly member has a horizontal flange 40 and a vertical flange 41. The horizontal flange 40 is connected at a right angle to said vertical flange 41. Each
10 horizontal flange 40 has an upper face 42 and a lower face 43. Each vertical flange 41 has an inner face 44 and an outer face 45. Each vertical flange 41 has a lower edge 46.

As shown in FIG 3, the back cover 15 has a front face 16 and a rear face 17. In the preferred embodiment a compressible material 20 is affixed to the front face 16 of the back cover 15. However, it is recognized that the compressible material 20 does not have to be affixed to
15 the back cover 15. In the preferred embodiment, the compressible material is foam however it is recognized that other compressible materials can be used. The compressible material 20 has an exposed face 21 and an opposed face 29. In the preferred embodiment the opposed face 29 is affixed to the front face 16 of the back cover 15, however it is recognized that the compressible material does not have to be affixed to the back cover. In the preferred embodiment, the exposed
20 face 21 is covered with a decorative material 22, preferably cloth. However it is recognized that the exposed face 21 of the compressible material 20 can be left uncovered. Alternatively, the exposed face 21 of the compressible material 20 can be covered with other decorative materials such as paper, plastic, metal, wood, or paint as is known by those skilled in the art. The combined thickness of the decorative material, the compressible material and the back cover is
25 equal to or greater than the depth of the vertical flange 41. The hingeable connection 14 allows the back cover 15 to be easily opened and closed thus allowing for the easy insertion and removal of display materials in a picture frame to which a frame assembly 10 is affixed. In the preferred embodiment one or more tabs 30 is affixed to or formed as part of the rear face 17 of

the back cover 15. Each of said tabs 30 extends beyond a circumferential edge 19 of the back cover 15, such that when the back cover 15 is in a closed position each tab 30 rests on an upper face 42 of a horizontal flange 40 of the frame member 11, 12 or 13. The tabs 30 maintain the rear face 17 of the back cover 15 in the same plane as an upper face 42 of a horizontal flange 40 of the frame assembly members 11, 12 and 13 when the back cover 15 is in a closed position. Although a preferred embodiment has at least one tab 30 it is recognized that the device can be provided without tabs 30.

As shown in FIG 4, in the preferred embodiment a frame assembly member 11, 12 or 13 is hingeably connected to the back cover 15 by at least one piano hinge 22. Each piano hinge 22 can be made from a metal, nylon, synthetic, composite or a plastic material, including but not limited to polycarbonate, polyvinyl chloride (PVC), acrylic, polyethylene, or polypropylene. In the preferred embodiment each piano hinge is affixed to the rear face 17 of the back cover 15 and to one assembly frame member 11, 12, or 13, preferably to an upper face 42 of a horizontal flange 40. It is recognized that the piano hinge 22 can be molded directly into the back cover 15 and one assembly frame member 11, 12, or 13. It is also recognized that back cover 15 can be hingeably connected to one frame assembly member 11, 12 or 13 by one or more pieces of plastic, metal, fabric, leather, or synthetic material that is sufficiently flexible, as is known to one skilled in the art to allow the rear cover 15 to be easily and repeatedly opened and closed when the piece of material is affixed to both the upper face 42 of a horizontal flange 40 and the rear face 17 of the back cover 15.

As shown in FIG 5, in the preferred embodiment one or more hinged fastener 27 is affixed to an upper face 42 of a horizontal flange 40 of a frame assembly member 11, 12, or 13. Alternatively, the fastener 27 can be affixed to the back cover 15. The fastener 27, in the closed position, holds the back cover 15 in a closed position. By moving the fastener 27 to an open position the back cover 15 can be easily and quickly opened to insert or remove display materials. Although the preferred embodiment utilizes a hinged fastener 27 it is recognized that other types of fasteners as known by those skilled in the art can be utilized, including but not limited to a sliding lock, a latch, a spring latch, a bolt latch, a spring claw latch, a compression

latch or a magnetic latch. Additionally, adhesive tape or fabric, or hook and loop fastener such as Velcro® brand fasteners provided by Velcro Industries can also be utilized to hold the back cover in a closed position. It is recognized by those skilled in the art that certain fasteners have more than one component and that one component of the fastener may be affixed to a frame

5 assembly member 11, 12, or 13 and a corresponding component may be affixed to the back cover 15.

As shown in FIG 6, the frame assembly 10 fits into a recess 52 in the rear from face 51 of a commercially available picture frame 50. The commercially available picture frame has an upper picture frame member 55, a lower picture frame member, and opposing side picture frame member 57. The recess 52 has a vertical face 53 and a horizontal face 54.

FIG. 7 shows a cross-section of a picture frame member 57. Each picture frame member 55, 56 and 57 has a recess 52 along the inner edge 59 of the rear from face 51.

As shown in FIG 8, When the frame assembly 10 is affixed to a commercially available picture frame 50 the lower face 43 of each horizontal flange 40 of each frame assembly member rests on the back surface 51 of the commercially available picture frame 50. The outer face 45 of each vertical flange 41 of the frame assembly 10 is positioned adjacent to the vertical face 53 of the recess 52 in the back surface 51 of a commercially available picture frame 50. The lower edge 46 of each vertical flange 41 is positioned adjacent to a transparent panel 47 that is sized to fit within the recess 52 and rests on the horizontal face 54 of the recess 52.

20 The frame assembly 10 can be affixed to a commercially available picture frame 50 by fastening means that are known to those skilled in the art. Means to fasten the frame assembly 10 to the picture frame 50 include but are not limited to mechanical fasteners, magnetic fasteners, adhesives, or hook and loop fasteners such as Velcro® brand fasteners provided by Velcro Industries. In the preferred embodiment, holes 48 are provided in the horizontal flange 40 of the frame members, 11, 12 and 13 to facilitate the attachment of the frame assembly 10 to a commercially available picture frame 50 by mechanical fasteners such as screws or nails.

While the present invention has been described herein with some specificity, and with reference to certain preferred embodiments thereof, those of ordinary skill in the art will

recognize numerous variations, modifications and substitutions of that which has been shown which can be made, and which are within the scope and spirit of the invention, as by adding, combining, or by substituting equivalents, while retaining significant advantages of the components of the invention, which are defined in the claims that follow. It is intended,

5 therefore, that all of these modifications, variations and substitutions be within the scope and spirit of the present invention as described and claimed herein, and that the invention be limited only by the scope of the claims which follow, and that such claims be interpreted as broadly as possible.

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